

*Carlsbad waters*



## FAUSTUS.

A WINTER midnight: in his lumbered room  
Faustus, the great magician, sat a lone;  
A magic lamp flared ghastly through the gloom  
On instruments, books, papers, round him strown;  
Smote not his ear the north wind's hollow boom,  
Nor rattling sleet against the window blown.  
Wrapped in stern thought, the Master, strong and  
wise,

Sat wrinkling his gray brows down o'er his eyes.

It was the last hour of the fatal day  
That closed the number of his years misspent;  
For he whose word the spirits must yet obey  
That live and work in every element  
Must soon lay by that supernatural sway.  
He can not now repair, nor even repent;  
While o'er the storm the clock's remorseless call  
To the swift moments echoes from the wall.

And Faustus murmured: I must listen to it—  
Time's footfalls—though I fain would stop my ears;  
Fain would I dash it down, but will not do it;  
I can not hush the wail of wasted years,  
And bootless, when my life is drained, to rue it;  
Prayer can not help, else would I pray; nor tears,  
Else would I weep. Time will not stay his pace,  
And Death and I shall soon stand face to face.

My scholars they have left me here alone  
To wrestle with my doom—for me to pray;  
For I, sometime to outward seeming grown  
Indifferent if it hasten or delay,  
Chid them, because I sank to hear their moan;  
For well I know, ere night shall pass away,  
My soul shall enter that dread realm of pain  
Whose brazen vault makes prayer forever vain.

I am not grown indifferent that I know  
My doom is certain as eternity;  
Bind to a rack whose tortures ever grow,  
From which I never more can wrest me free;  
Not worse to plunge at once in infinite woe,  
What I must, suffer, be what I must be,  
Than linger, mid dead hopes and joys and fears,  
The wreck and ruin of my wasted years.

I would I might not think, yet think I must;  
I can not, what I most desire, forget.  
O were I nothing more than senseless dust,  
Or like a day which when its sun has set  
Sleeps, ne'er to wake! Alas! that holy trust  
Of happy sleep, after life's fume and fret,  
I know it not; there's nothing holy mine:  
Repining all my days, I still repine.

Remorse, remorse, thou sharpest sting of fate!  
The thoughts which I have never dared to think  
Now swell my heart, and grow articulate  
In words I can not smother. On the brink  
Of life and death, o'erlooking both, I wait,  
And living thus in both, from either shrink;  
Yet could I welcome now hell's fiery doom,  
If those fierce flames these memories might consume.

Is there forgetfulness in hell? I live  
Life o'er again these moments, each a year.  
O fearful power of memory that can give  
Life back again, though only on its bier!  
Life that ran through the years, as through a sieve  
Runs water, leaving nothing. Why, so near  
The end of all, should Time turn back again  
To wring my spirit with remorseful pain?

Alas! I dreamed not to have ended so!  
A golden, burning goal had made me blind.  
I dreamed of bringing good to man below,  
And thought to leave a glorious name behind;  
To strip from knowledge all the empty show,  
And strike to the great centre through the  
rind;

To make the spirits serve me, and compel  
Time to yield all his secrets to my spell.

Ah, well I mind me of that summer day  
When, driven by the demon of unrest,  
I passed the city gate, and took my way  
Toward the haunted forest in the west  
That like a cloud on the horizon lay;

And with my purpose only half confessed,  
Dreading to linger o'er what I would shun,  
I hastened forward in the setting sun.

And at the corner of four roads that met  
Just in the border of that haunted wood  
I stayed, my feet what time the sun had set.  
It was a grim, unholy neighborhood,  
And all about were fearful things that whet  
My horror: close at hand a gallows stood,  
And underneath it was a murderer's grave,  
And in the forest's edge a witches' cave.

The mystic circle and the signs I drew;  
And then I waited for the deepening night,  
Until the screeching owl above me flew  
With her wild cry of warning and affright.  
The grass around was wet with holy dew,  
Save where I stood; and then I struck a light  
With magic implements, and spake a spell  
That lefth the world and echoed down in hell.

Then darkness thickened round me like a wall,  
Hiding the world, but not the starry sky;  
And from it I could hear the demons call  
My name, but I would yield them no reply;  
And then there fell a silent interval  
Of nameless horror; not a sound nor cry  
Was heard, but spectral eyes that froze my blood  
Glared into the strong circle where I stood.

Then suddenly the swarming air was full  
Of unimaginably frightful shapes:  
Led by a skeleton that bore his skull  
Under his arm, a crowd of dragon apes  
Whirled round me, stretching out their arms to pull  
Their master from his vantage. Then a lapse  
Of utter darkness; while, with folded arms,  
I waited for the end of these alarms.

It came. A radiance like a summer dawn  
Disclosed a vision out of fairy-land—  
An overshadowed arbor on a lawn,  
Where lay a lovely lady, with a band  
Of fair attendants, and a milk-white fawn  
Crouching beside her feet. She raised her hand  
And greeted me and smiled. Not Eve so fair  
In Eden as that daughter of the air.

Toward me she cast her large and lustrous eyes,  
And smiled, and drew me to her with her hand;  
Her red lips parted with voluptuous sighs,  
And her alluring beauty half unmanned  
My spirit, and o'ercame me with surprise;  
But I had nobler favors to demand  
Of the dread Powers than love, however sweet;  
And darkness swallowed soon the fair deceit.

A pause: then stood the Tempter at my side.  
He promised me the gift of spirit-sight,  
That I might know whate'er the world may hide,  
And pierce the farthest region of the night;  
Might loose the secrets wisest men had tried  
In vain to loose, and learn the awful might  
That rules the universe and all beyond  
My mortal range. And then we made that bond.

With him I sought the regions under-ground,  
And passed the boundaries of eternal pain;  
Saw Death on his white horse, that made no sound,  
Though rushing by with all his ghastly train;  
Searched through the universe from bound to bound,  
Only to find my utmost knowledge vain.  
The heights and depths were subject to my will,  
But the dread secret was a secret still.

Knowledge! what gav'st thou but the power to see  
That nothing could be known? What profit all  
The arts that bound the spirits under me?  
I grope, a blind man on a doorless wall,  
Where all is mystery and perplexity,  
And where alike the wise and foolish fall.  
Ah, Nature's open book! was ever sage  
Could tell the meaning of the simplest page?

O mother Nature! kind to lowly wants,  
Thou giv'st the husbandman due sun and rain,  
Seed-time and harvest, fair and bounteous plants,  
For use and show, and mak'st no labor vain;  
But when the heart of man for knowledge pants,  
And when, with tears and sighs and spirit-pain,  
He casts abroad the seed of earnest thought,  
Ah! wherefore ever mock his hopes with naught?

Alas, that I became so basely proud,  
And gave my soul to bitterness and scorn;  
That, when I found I could not grasp the cloud,  
I, who once thought me for high purpose born,  
Should play the common juggler for the crowd,  
Amuse them with low tricks with cup and horn,  
And be the chief buffoon at emperors' courts!  
Yet, ah! my heart was never in those sports.

O loathsome pandering to gaping boors  
And royal fools! O impotence of pride,  
Which drove me into woods and lonely moors!  
For, ah! the universe is not so wide

That one can fly those merciless pursuers,  
Remorse and Shame, nor from them ever hide,  
Though one should seek in hell the deepest cave;  
And eruel even the rest they give their slave.

Even Death, that makes all earthly troubles well,  
An ever-haunting phantom, mocked my prayer;  
And that sweet apparition, sent from hell,  
Lured me but certain moments from despair,  
Most beautiful of phantoms, and most fell;  
Was never earthly maiden half so fair;  
I might have deemed her fresh from paradise,  
Yet knew she was a demon in disguise.

No more! no more! It makes my senses reel.  
It almost makes me wish for life again.  
Yet surely life, like a revolving wheel,  
Could but turn on to this same hour of pain,  
Rouse, Faustus! rouse thyself, and set thy heel  
On bitter-sweet remembrances and vain  
Remorse: for thee the past is ever past,  
And for the time to come the die is cast.

'Tis east! The Judge in heaven has closed His ear.  
I will not pray vain prayers, will not repent.  
Away with memory and away with fear!  
Not with loud blasphemy will I resent  
My doom, but with calm mind and will austere  
Await my adversaries malevolent:  
They'll come to rend me limb from limb ere long,  
But, though I am their prey, will find me strong.

Shall I, who once have forced those brazen doors  
Where the doomed spirit supplicates in vain,  
And breathed the hot breath of those parched shores,  
Now quake to see those portals yawn again,  
And face the lake that ceaseless flames and roars?  
Not loss of heaven, nor hell's eternal pain—  
Nay, nay, not that I grieve, not this I fear,  
But his triumphant and malignant jeer.

And must I evermore lie crushed and dumb,  
Vanquished, and emptied of my vaunted skill?  
In many a struggle have I overcome  
This Lucifer, and bent him to my will;  
And wherefore in that lower world suecum?  
Shall I not Faustus be, and Master still?  
Him I defy, with all his brood accursed!—  
It strikes! My time is finished! Do your worst!

### CARLSBAD WATERS.

**F**ANCY a town builded on the lid of a  
boiling kettle. That is Carlsbad."

What humorist first said this I do not  
know, but it is a fair dash at a description  
of the place in its character of a thermal  
spring, and it is with that character that  
we are concerned in this paper. Carls-  
bad is an attractive place in itself during  
the summer months; the scenery and the  
excursions in the neighborhood are of the  
most romantic; and there is a kindly tone  
in the social life which contrasts notice-  
ably with the stress and anxiousness of  
that on the Prussian side of the frontier.  
The Austrian geniality is charming; but  
this I must not discuss here, nor the other

pleasant features of life in the town. Carls-  
bad as a curative mineral spring will form  
a topic large enough for the present.

A little topography, however, will not  
be out of place. Carlsbad is an Austrian  
town of twelve thousand inhabitants and  
nine hundred dwelling-houses, situated in  
the northwestern corner of Bohemia, and  
near the frontier. It is a thriving manu-  
facturing place; but a main source of its  
prosperity is naturally the mineral waters.  
More than twenty thousand guests came  
last year (1882) to try their virtues.

The stream of visitors has been flowing  
during centuries of summers to Carlsbad  
—ever since the thirteenth century at

least. Later than this the springs received their present name from Charles IV., Emperor of Austria and King of Bohemia. The local legend is that he discovered them in the year 1358 while on a hunting excursion. A dog, too eagerly pursuing a deer, fell into one of the hot springs; his yelping brought the Emperor first upon the spot, where the thermal water, wreathed with clouds of vapor, pulsed out of the cleft of the rock. The huntsmen, rushing in after their leader, named the place Charles's Bath, and Carlsbad it has been called to the present day. The story is a pretty one, and may be substantially true; but as to the discovery of the springs, they were well known long before the time of the imperial hunter. Their site is indicated upon a Bohemian map of the previous century under the name of Wary, or "warm bath"; while the stream upon which Carlsbad town is built has a name much older than this. Its meaning settles the question of the antiquity of the springs. The "Tepl" means "the tepid stream," the word's etymology being the same in English and in Slavic. But the Emperor Charles, if he did not discover the place, at least gave it its vogue; he frequented Carlsbad, and built a palace there in 1358. Ever since that time it has been known as the most efficacious of the many springs in German-speaking countries.

The town of Carlsbad occupies the romantic valley of the Tepl; the houses are beaded along the rapid yet winding stream for a distance of two miles from its confluence with the river Eger, a stream which falls into the northward-flowing Elbe. The town occupies both sides of the stream, and toward its centre the houses are crowded against the hills on either side, so that a building may have five stories in front and but two or three in the rear. The finer boarding-houses are built upon the hills which wall in this narrow valley; and it need not be said that their elevation gives them a somewhat purer air than those which stand upon the lower levels. But the town itself has an elevation (at the river level opposite to the Sprudel colonnade) of 1214 feet above the Adriatic Sea; and this height, in the latitude of the place,  $50^{\circ}$  north (the longitude is  $13^{\circ}$  east from Greenwich), insures cool nights after the warmest days. The heat is seldom excessive, though the cli-

mate is somewhat variable. The mean temperatures are: summer,  $66\frac{1}{2}$ ° F.; spring and autumn, each  $47^{\circ}$ ; winter,  $33\frac{1}{2}$ °; the year,  $43^{\circ}$ . The air is pure, and the prevailing winds are northerly and westerly.

Eighteen of the "wonder-working" springs, of various degrees of warmth, are now in use in this pleasant valley. They are ranged in a nearly straight line that extends from north to south about a thousand yards; it is presumably a crack in the lid of the "boiling kettle." Deep borings have been made in the crust at various points. Dr. Pichler says that the borer, after piercing this calcareous crust upon which the town is built, penetrated into a vast subterranean reservoir, which it was impossible to sound. "Every effort to measure the depth of this gulf has failed."

From these deep caverns the mineral waters find their outlet under high pressure, and sometimes with amazing force. The Sprudel, the most famous, most abundant, and the hottest of the springs, after spouting and fuming for centuries through its covered way, took a fancy of recent years to force a new outlet for itself, and it appeared, to the consternation of the Carlsbad people, at the bottom of the adjoining Tepl river, which it warmed and set a-steaming. Total cessation of the Sprudel bathing and "drinking cure" in consequence—an arrangement not at all to be permitted. The engineers went at once to work. But it took months of toil to replace the spring. It was necessary to level the bed of the river, and to pave it for many rods with massive slabs of granite, clamped and cemented; while the banks of the stream itself were sealed with walls of cement. This done, the runaway spring was forced back to its ancient channel, where it plays to-day as of yore.

It is a wonderful sight, at least until use has familiarized it, that pulsation of the hot earth artery. It reminded me of Hobbes's notion, that I used to read about in college, of the earth being a living creature, with veins and arteries and a systemic circulation like an animal's. The mineral ichor rises and dances in clouds of steam; it fumes, it spouts, it spatters, the column playing at varying heights, according to the varying pressure of the escaping gases; and the mineral vapors stain the girders of the high colonnade above it. I have seen fountains of liquid lava toss and writhe in the same way, but

they played a thousand feet in the air, and upon a mountain summit. The utmost ambition of this hot fountain of Carlsbad is to leap to a man's height, and to scatter a few drops now and then outside of the great iron basin in which it plays. The small geyser flows away, as smoothly as a verse of Virgil, through an opening in the bottom of the basin. Two little maids of twelve, neatly dressed, dip up the water for the guests that file slowly past the spring. Every morning, for two hours at a time, these girl-priestesses of the fountain dispense the thermal waters to a great company of people gathered from every part of Europe; and here probably the famous springs will flow for many generations to come.

And whence do these waters come? What is the secret of their origin? In what living laboratory far under-ground do they acquire their healing properties?

The theory of the Carlsbad mineral springs is a simple one. The surface waters of the region, the rain and melting snow, the Tepl water itself, penetrate through the crevices of the granite rock to a great depth, dissolving more and more of its constituents as they sink deeper, and receive more and more of the earth's increasing heat. That heat, at the depth of about 8000 feet, is equal to that of the hottest Carlsbad spring; its reservoir, therefore, can not be less than 8000 feet below the surface. The waters have now received from the rock all their mineral constituents, the carbonates of soda, lime, and magnesia, with many others, and now a great quantity of carbonic acid gas is set free by the heat, forcing the mineralized water back to the surface as a hot spring. It returns by channels incrusted with mineral deposits, and so made smoother and easier than those in which the surface water trickles down. And the hottest spring is, naturally, that which comes by the shortest channel from the common reservoir. This is the Sprudel, which loses the least of its heat on the way to the surface. All the other springs come from the same reservoir, but by narrower or more tortuous channels, and so are cooler when they reach the surface.

The chemical constitution of all these springs is almost exactly the same, except that the cooler springs retain more of the carbonic acid gas. They contain only such substances as they can dissolve, under heat and pressure, from the granite

rock through which they have been filtered. The taste of the waters has been likened to that of chicken broth a little over-salted; but that resemblance is less striking than in the case of the famous spring at Wiesbaden, which to my palate is wonderfully like the broth in question; but the mineral chicken, however efficacious otherwise, is not at all nutritious.

The water of the hotter springs has a faintly saline odor; the cooler waters sparkle a little in the glass, owing to the free carbonic acid in them. Exposed to the air, they cloud and cast down a brown precipitate. The daily discharge of the Carlsbad springs is something over 100,000 cubic feet, of which the Sprudel supplies two-thirds. But of the Sprudel water only about one-sixth part plays in the fountain. The rest is led away in iron pipes to the bath-houses, or is exported, or used for the distillation of the Carlsbad salts, for which its own heat is made to serve as fuel. It is hot enough, indeed (166° F.), to boil eggs, and some of the thrifty housekeepers of the neighborhood use the water for cooking purposes.

Here is a recent analysis of the three chief springs of Carlsbad, showing their nearly identical composition. Göttl, experimenting upon a large mass of the Sprudel water, found traces of no less than twenty metals and acids, of which gold even was one. But the drinker of the waters will generally take less account of the ingo than of the outgo of this metal.

ANALYSIS BY PROFESSOR LUDWIG, OF VIENNA, 1879.

10,000 Grams of the Water contain—	Sprudel. Temperature, 162°.	Mühlbrunn. Temperature, 133°.	Schlossbrunn. Temperature, 126°.
Sulphate of soda .....	24.05	23.91	23.16
Carbonate of soda .....	12.98	12.79	12.28
Chloride of sodium .....	10.42	10.23	10.05
Carbonate of lime .....	3.21	3.27	3.34
Carbonate of magnesia ...	1.67	1.61	1.61
Sulphate of potash .....	0.86	1.19	1.93
With very small quantities of other constituents.	.....	.....	.....
Total of solid constituents	55.17	54.73	53.30
Carbonic acid, half { combined .....	7.76	7.68	7.49
Carbonic acid, free.....	1.90	5.17	5.82

All of the Carlsbad springs, as I have said, contain substantially the same elements in solution. How are they to be classified among the multitude of other mineral springs?

Many ways of classifying mineral waters, as by their geologic relations, their chemical nature, or their use in therapeutics, have been employed by students of the subject. Practically I find the most convenient way is to use a fourfold division, as follows: 1, acidulous springs; 2, ferruginous springs; 3, saline springs; 4, sulphureous springs—subdividing these main classes according to their more particular composition. Of course this is not an accurate scientific classification, for many of the mineral waters contain constituents of two or more than two of the above classes. But it is never easy to make perfect classifications, and when made they seldom, if at all complicated, repay the student's trouble. It will be quite enough for the present purpose if we put down the Carlsbad waters under a subdivision of the third class, and call them *alkaline saline springs*. Their leading constituent, the sulphate of soda, places them in the group of the so-called "Glauber's salt waters," of which in all Europe there are but two other representatives among warm springs—the waters, namely, of Stubnya and of Bertrich.

The only practical difference between any two of the Carlsbad springs is the difference in temperature and in the amount of free carbonic acid gas, which increases as the temperature diminishes. We shall see that these are important factors in the choice of the particular spring that is best suited to the given invalid and to his particular complaint.

The following are the names and temperatures of the springs now actually in use:

THE CARLSBAD MINERAL SPRINGS—NAMES AND TEMPERATURES.

	Reaumur.	Fahrenheit.
1. Sprudel . . . . .		
2. Hygeiaquelle . . . . .	59.5°	166°
3. New Hygeiaquelle . . . . .		
4. Bernhardsbrunn . . . . .	53°	151°
5. Curhausquelle . . . . .	52°	149°
6. Neubrunn . . . . .	50°	145°
7. Felsenquelle . . . . .	48°	140°
8. Theresienbrunn . . . . .	48°	140°
9. Mühlbrunn . . . . .	45°	133°
10. Schlossbrunn . . . . .	43.5°	130°
11. Marktbrunn . . . . .	40°	122°
12. Kaiserbrunn . . . . .	39°	120°
13. Elisabethquelle . . . . .	37.6°	116°
14. Hochbergerquelle . . . . .	33°	106°
15. Kaiserkarlquelle . . . . .	31°	102°
16. Russische Kronquelle . . . . .	29°	97°
17. Sprudelsäuerling . . . . .	23°	84°

And now we have to ask: What are these springs good for? What kind of

cases do they cure or relieve? In what do they fail? Who should go to Carlsbad, and who stay away?"

These are searching questions, and they are daily put to the consulting physician. I will answer them according to my own observation and experience, and will presently give a somewhat detailed account of the indications for treatment. But first it will be requisite to describe the waters and the methods of using them, whether internally or externally.

*Internal use.* The Carlsbad waters, aside from their primary quality as so much spring water, have three active principles of their own: 1, their elevated temperature; 2, the contained carbonic acid gas; and 3, the various salts that they hold in solution.

1. The temperature exercises a certain amount of influence upon the action of the waters. The warmer springs accelerate absorption, gently stimulate the circulation of the blood, produce perspiration in some cases, and act as a sedative upon the nervous system. When swallowed slowly, however, as it is best they should be, the purely thermal action of the waters is not always marked, as they receive the temperature of the body in that case as soon as they reach the stomach.

2. The carbonic acid gas acts directly upon the nerves of the stomach. Its effects are to augment the secretion of gastric juice, to calm the gastric nerves, and at the same time to strengthen the peristaltic movements of the stomach and of the intestinal tract. Upon some patients the carbonic gas has a pleasantly exhilarating effect; in nearly all it stimulates the appetite and the digestion, and aids the absorption of the mineral water.

3. The effects of the salts contained in the Carlsbad waters are in large part due to the three elements first named in the analysis just given—the sulphates and carbonates of soda, and the chloride of sodium. They augment the blood corpuscles, and increase the alkalinity of the blood. The waters are antacid *par excellence*. They correct the too abundant acidity of the intestinal tract, and stimulate its action; they stimulate, too, the venous and arterial circulation, and act strongly upon the liver, the kidneys, and the lymphatic glands. The sulphate of soda is a mild laxative.

The different springs, again, do not produce the same results. The Sprudel wa-

ter, for instance, is absorbed more rapidly than the Schlossbrunnen or other cooler spring; and patients who will not bear stimulation must use the cooler waters, especially those in whom the action of the heart requires to be watched. In general the first use of the waters produces a sense of physical comfort, with a tendency to moisture of the skin. Four or five glasses produce a mildly laxative effect in most cases, while a quantity not exceeding a pint generally has the contrary effect. There are patients who never require more than this smaller quantity for the regulation of the bowels; these are, however, exceptional cases. The waters are taken in the morning as a rule; the usual hours are from 6 to 8 A.M., of course before breakfast, except in the case of delicate invalids, who may be permitted to breakfast lightly beforehand if necessary, and even to use the waters at home. The custom of the place is to take them during the morning promenade from spring to spring.

The scene is a picturesque one, the more so because at Carlsbad one is far enough eastward in Europe to see Asiatic costumes occasionally among the guests. The long line of promenaders, ever flowing and reflowing gently under the colonnades of the great Kurhaus or before the dancing fountain of the Sprudel, is one of the sights of Europe; and it has its grotesque element in the circumstance that each and every one of the thousands carries an earthenware mug, hung by a strap around his neck or hers—a mug, it must be, not a glass tumbler, as at most other spas, for glass would crack under the too lively heat of the Sprudel water. There is a solemn drollery in the scene. Each promenader in the long line keeps his place in the *queue* as carefully, at least during the height of the season, when the crowd is large, as if he were waiting his turn at an American ticket office.\*

\* Amusing incidents occur sometimes. While I was in Carlsbad the town was laughing at a guest from Prague, a Hebrew, whose dress and appearance were regarded as proof that Prague was the dirtiest city in Europe. One morning he found himself in the pensive procession of mug-bearers, but without a mug. The spring was dancing close at hand; it would not do to leave his place in the interminable line. He turned upon the next in order who walked behind him; it chanced to be the Duke of Vallombrosa. Invalids, be it noted, form a real democracy at the Austrian watering-places, where prince and commoner may jostle each other if they will.

It is no longer the custom to take large quantities of the water. Since 1870 the usual prescription has been two or three cups per day for the beginner, gradually increasing to eight or ten at the highest. A third of this amount may be taken in the afternoon, unless it should produce a decidedly laxative effect.

From time immemorial until the sixteenth century the Carlsbad springs were used only as baths, and the zealous doctors, in order to make assurance doubly sure, used to steep their patients for the greater part of the day in the bath-tub. Then came the fashion of drinking the waters instead, and the re-action was extreme. The baths were totally disused, and the unfortunate invalid was sentenced to twenty or thirty glasses per day. Either system was a mistake. Such of the earlier medical records as remain—and they go back to the year 1520—show that this strenuous treatment, whether internal or external, actually did more harm than good. There is to-day a wise compromise between these extremes. But, curiously enough, a “fear of Carlsbad,” so named and described by medical writers, survives from those days of heroic treatment in the Middle Ages, and it actually deters some patients from a visit to the place. We have said, however, that the internal use of the waters is now prescribed with moderation and with discrimination, and the treatment of our day employs the bath with equal discrimination and moderation.

Nearly every known form of bath may be had at Carlsbad, but I shall speak only of two—the Sprudel or mineral baths, and the mud baths.

The Sprudel water, emerging at a temperature of 162° F., is conducted in long iron pipes to the Kurhaus and to other bathing places, where it is cooled to the degree required. Tepid, it forms a pleasantly sedative bath; warm, it should be used carefully, as a too long immersion sometimes produces symptoms of faintness. Fifteen minutes is the usual duration of the bath. It should not be taken soon after a meal.

What causes the good effects of the warm Sprudel bath? That is not an easy

“A drink from your cup, Mein Herr?” “It is yours,” returns the Italian. He of Prague takes a deep draught from the duke’s mug, then turns again to restore it. The Duke of Vallombrosa was gone, doubtless to get another mug. “What wastefulness!” said he of Prague.

question; volumes have been written to answer it, and it is still unsettled. Until recently it was stoutly contested that the mineral constituents of the water were in part absorbed by the skin, and so introduced into the circulation. Parisot and other experimenters have shown that this is a mistake. The human skin is impervious to water, mineral or other, as one would suppose, indeed, that any serviceable hide of man or beast should be. The medicinal virtues of the waters are not absorbed. Whether their beneficent effects are due to an impression upon the cuticular nerves or to some other cause is still an open question; but centuries of experience have shown that they do sick people good. There is at any rate no doubt that people get better, or get well, after using them properly, which I take to be the desirable point in any treatment.

The peat baths, or mud baths, have gained much in popularity within a few years, and a large building has been erected, since 1880, devoted exclusively to this singular form of the cure. The material employed for the mud bath is a rich black peat; it comes by rail from the neighboring watering-place of Franzensbad, some two hours distant, where Carlsbad owns a tract of moorland which supplies the peat. It is rich in mineral constituents, and it makes what may be called a clean mud. First pulverized, but not too finely, then screened and freed from accidental impurities, it is mixed with the hot Sprudel water when the bath is ordered, and rolled in a stout wooden tub to the bathroom, where it stands fuming by the side of a similar tub filled with warm soft water. One's first mud bath is an odd experience. I confess having felt a slight reluctance to immerse myself in this malevolent mass of peat mud, although it fumed not unfragrantly, and its temperature, 102° F., was delightful. It seemed like undoing the results of a lifetime's ablutions. The difficulty is to get your first foot into it; that done there is no more hesitation; you sink luxuriously into the warm fuming mass. Mortal body was never received into a more deliciously soft embrace than that of this semi-fluid peat. Its viscous resistance to my movements, its weight and warmth, the clinging titillation of the unresolved lumps of mould, its faint fragrant earthy odor, all combined to make a strange experience even for one who has tried many baths in many places. It was

no less delightful than strange. Whether for the invalid or the well man the peat-mud baths at 31° Réaumur are one of the most luxurious of enjoyments. I took them as a pleasurable incident of a visit made for the purposes of special study. But if I should ever contract to furnish an earthly or a Mohammedan paradise, I should fit up the entire basement story of the paradise with mud baths.

It should be added that the peat mud is not sticky, but falls off easily on leaving the bath, and an attendant will help you, if desired, to remove its last traces in the tub of warm water that stands by your side.

But who shall bathe? Most of the visitors use the baths, and yet their fitness to any individual case can only be decided by the physician. Warm baths are for some persons dangerous: for whom, the patient can not himself decide beforehand. When prescribed they are generally taken three or four times a week; a daily bath is for the majority of visitors too much. The forenoon is the best time for bathing; the Carlsbad breakfast being at about nine o'clock, the bath may be taken toward noon, or, if more convenient, in the afternoon, when the digestion of the dinner is fully completed.

The usual temperatures of the mineral-water baths range from 80° to 96° F.; of the peat baths from 96° to 100°. In these a higher temperature is borne than in the water baths. The vapor baths range from 100° to 130°. A careful management provides every bath with a thermometer, and the visitor should observe for himself that the bath is heated to the exact degree prescribed. Do not bathe immediately after severe physical exercise or strong mental excitement. During the bath gentle frictions of any ailing parts should be made, as of the region of the spleen or liver, and of inflamed or stiffened joints. Should any giddiness occur, leave the bath at once and call the attendant. After the bath, a nap at home is often very refreshing.

I will now turn to the more particular consideration of the ailments that are specially amenable to treatment at Carlsbad. No written description either of cases or of treatment can indeed take the place of proper advice for the particular case, for each patient has his peculiarities of temperament, his idiosyncrasy; and it must always remain the responsible task

of the specially qualified physician to decide according to the need of the individual sufferer—to say to one, according to his need, "Go to Carlsbad"; to another, "Go to Mont Dore, or Salins, or Luxeuil, or Franzensbad." To prescribe a spring is like the right direction of any other serious medical treatment—it can only be done rightly by the physician who has thorough experience in balneology. Premising this much by way of caution, I will note such indications of treatment as may, I trust, be not without use to lay and medical readers as pointing the way to a quarter where relief may be fairly expected by many patients, and for not a small number of different ailments. The main object of this paper is to describe what a medical friend of mine, himself an author of an excellent monograph upon the Carlsbad waters, has called the "rationally sustained indications" for treatment at the most effective springs of German-speaking Europe.

The foremost class of indications for treatment at Carlsbad is for the relief or cure of abdominal complaints, and especially disorders of the stomach, liver, and spleen.

1. For dyspepsia in its various forms. This disease is a common one in America, and many of my readers will be very familiar with its symptoms. Dyspepsia is itself, indeed, but a symptom, or a group of symptoms; and of what ailment?

Atony, or weakness of the stomach, flatulence, indigestion, fatigue, mental preoccupation or excitement, may all cause dyspepsia more or less permanent. But true chronic dyspepsia means one thing only, and a serious thing—it means chronic catarrh of the stomach. This is a painful sentence to pass on an invalid. Catarrh of the stomach may result from opposite causes, either from eating too many great and good dinners, and so overtaxing the digestion and finally ruining it, or, on the other hand, from too hasty eating, or from indigestible or innutritious food. The first-mentioned kind of dyspepsia, the dyspepsia of gluttony, does not very often occur as yet in America, because we are not heavy eaters as a rule. But as our fortunes, our leisure, and our cooks improve, we too are developing a few choice gluttons—to me an interesting class of men, because they are still rare among us. They are developed from the *gourmand*, a most genial and amiable character often: give

me a discriminating *gourmand* for a companion. The *gourmand* is he who has a refined enjoyment of the taste and flavor of food, and who therefore eats appreciatively. When he begins to eat too much, then he becomes a glutton, and sooner or later he will probably suffer from dyspepsia. But it is hasty eating rather than excessive and badly cooked or otherwise indigestible food that is responsible for most of the dyspepsia in a community. The human stomach will endure a good deal of maltreatment, at least in a person whose constitution is strong. But when the maltreatment goes too far, either in the way of too much food or too little, or food of bad quality, or food too hastily or irregularly eaten, the penalty is not far off. It is dyspepsia. In our day the stomach is not a cause of envy to the members, as it was in the simpler time of *Æsop*. The modern stomach mutinies against the members; and it avenges itself with Alecto's scourge, more scientifically describable as chronic gastric catarrh.

I need hardly enumerate its too generally known symptoms: the lessened or extinguished appetite, the distress after eating, the fevered tongue and mawkish taste in the mouth, the eructation and nausea, the broken strength and sleep, with profound depression of the spirits. They constitute one of the most distressing of ailments, and one of the most difficult to relieve by ordinary medication.

Dyspepsia is adapted to treatment by a properly chosen alkaline saline spring; by which spring, at Carlsbad or elsewhere, the physician must decide. I have seen too many instances of speedy benefit from their use to doubt the healing power of the waters in cases of this description; but strict care is necessary in following the ordained regimen and hygienic directions. Of these, which are of the utmost importance in the treatment of chronic cases, I will speak presently. Even when the gastric catarrh has extended, as sometimes happens, into the duodenum or the biliary ducts, so that jaundice supervenes, the Carlsbad waters often give relief or cure.

Another form of dyspepsia occurs in pale anaemic persons, as in young women who suffer from chlorosis. There are tenderness and pain in the epigastrium, aversion to food, weariness of the whole muscular system, and palpitations occur

on making the least effort. My friend Dr. Grünberger, of Carlsbad, gives a lively description of the contrasted sufferers who seek relief at the springs. "To the pale miss who answers to the above description her companion at Carlsbad offers a striking contrast. He is well-nourished; his rubicund face declares that he knows the delights of dining, and that he takes frequent pleasure in champagne wine, in sherry, and in brandy. When you remark his absence for two or three days at a time from the morning promenade around the springs, you may be sure that the gout, in addition to dyspepsia, has him in keeping; he suffers acutely from effusion into one or more of the principal joints, and plenty of uric acid is to be found in the deranged secretions. In spite of the waters, all seems to be going wrong. But after a cure continued through a few weeks the sharp contrast between the condition of the two invalids is wonderfully lessened. The pale miss is invigorated, her appetite increases, she has gained in weight; while the gouty effusion of her companion is gone, his step is firm and sure again, the dyspeptic symptoms are relieved, and the action of the digestive system has again become normal." Persons, however, who have been accustomed to an overgenerous diet are apt, on leaving the springs, to resume their old habits, and so to regain their obesity.

2. Dilatation of the stomach not infrequently accompanies the form of dyspepsia that results from gross eating. This, when far advanced, is hardly amenable to a complete cure; but the organ should be cleansed daily by the Carlsbad waters, introduced and withdrawn through a stomach-pump; and in milder cases a complete cure may be expected.\*

3. Chronic constipation and chronic diarrhoea are both cured at Carlsbad, and often, indeed, cured by the use of the same spring. Among the more frequent causes of the former complaint are neglect, a too sedentary life, the abuse of purgatives, and a diet in which too little use is made of fluid food. It is a national fault of our American dietary that we do not eat enough soup. And if, in addition, beer or well-diluted red wine could be substituted for the stronger liquors that are so much in vogue among us, the

health of our community would be better.

The leading symptoms of chronic constipation are a feeling of oppression in the abdominal regions, headache, and palpitation of the heart—often mistaken by the sufferer for cardiac disease. A single season of appropriate treatment by the mineral waters, with proper hygienic and dietary care, will often cure cases of long standing, and especially that form of the disorder which prevails among sedentary persons and women, and which is due to intestinal torpor rather than to any mechanical or physical obstruction.

It may seem strange that a given mineral spring should cure ailments of such directly opposite character as the two just mentioned. Yet the fact remains, and the explanation is not a difficult one. The Carlsbad waters have but little effect upon the digestive organs of a healthy person. But when they come in contact with an inflamed or excoriated mucous surface, they heal it, and so check a diarrhoea; while a weak peristaltic motion of the intestine is strengthened by the same water, a sluggish secretion is stimulated, and thus the mechanical and the sedentary causes of constipation are removed.

4. Diarrhoea presents itself under two chief forms—*irritative* and *eliminative*. Of the first, the summer diarrhoea, caused by eating unripe fruit, is a familiar example; it is cured by removing the cause, and generally speedily. The second form is far more various and complicated in its causes, and it is correspondingly difficult to manage, and it includes the multitude of cases that are sent to foreign springs for treatment. The chronic cases are most frequently the result of a chronic intestinal catarrh; this depends upon a morbid condition of the intestinal tube and of its secretions, and often proves amenable to treatment at Carlsbad.

5. Diseases of the liver and biliary ducts, enlargements of the liver of various kinds, are treated with marked success at Carlsbad, especially those which come from long residence in hot climates. One of the most interesting cases I ever saw was that of an army officer who had stood out thirty-five summers in India, but who had finally succumbed to the climate; his liver, as he expressed it, putting his hand at the level of the umbilicus, "came down to here." After a treatment of five weeks the gland had recovered its normal pro-

\* See Dr. I. Kraus's excellent little manual, *Carlsbad: its Thermal Springs*.

portions, and health was restored. But to prevent relapses this gentleman makes a visit every summer to Carlsbad and Marienbad, finishing the cure at a mineral spring in France or Switzerland.

Fatty liver not unfrequently exists for years before the patient takes much notice of it, the disease becoming chronic and gaining slowly until it is beyond relief by mineral waters or in any other way. But when it occurs in persons otherwise healthy, and as the result of too good living or of drinking, it is curable by a saline or alkaline water. The symptoms are weight and tension in the region of the stomach, with derangement of the digestion and breathing. There is no pain. *Cirrhosis* of the liver can only be benefited in its earlier stages at Carlsbad.

Congestion of the liver, unless it is passive, *i. e.*, caused by constipation and other functional disorders of the viscera, makes itself known by the sensitiveness of the organ to the touch, and by its enlargement, especially in the left lobe. If long-continued, structural derangement of the organ may follow. Treatment in the early stages is necessary. The Carlsbad waters will restore the deranged functions of an organ; but they will not repair the structural lesions of the organ itself.

*Jaundice* is a symptom, not itself a disease; it is due to the absorption of the coloring matter of the bile and its circulation with the blood. Whatever hinders the discharge of the bile into the intestine will cause jaundice: the narrowing of the bile ducts will do this; mechanical pressure upon them will do this; the inflammation of their lining membrane will do this. Whether the symptoms are those of chronic inflammation in the liver or the duodenum, or are caused by any other interruption to the flow of the bile, or whether, on the other hand, they are due, as not unfrequently happens, to some strong nervous perturbation, which may equally derange the flow of the bile without leaving the traces of any pathological alteration, the Carlsbad waters are an effective curative agent. Resident physicians employ them also to check the excessive secretion of bile, termed *poly-cholia*, which sometimes constitutes a malady in itself.

*Gall-stones* are deposited from certain elements of the bile. These concretions are very solid, and there is no proof or even presumption that they are dissolved

by the direct action of any mineral spring. Dr. Kraus has "repeatedly, and for some considerable time, exposed gall-stones to the action of hot Sprudel water" (167° F.) "without noticing any changes whatever" (*Carlsbad: its Thermal Springs*). But he adds: "The possibility of the bile itself acting destructively on the concretions, after becoming alkaline to a certain extent, can not be denied altogether. It is certain, at least, that we frequently meet with corroded concretions in a porous state, and sometimes even crumbled to pieces, in patients who have been drinking the waters for a considerable time. It may safely be asserted that their elimination is caused by the mechanical action of the waters. Their usefulness is shown by the thinner and normal condition of the bile during their use, by which the formation of fresh concretions is prevented." He describes a singular case, that of a lady who came to Carlsbad with symptoms of malignant disease of the pancreas. Several physicians considered the case as hopeless, and Dr. Kraus admits that he himself was one of them; but he prescribed six glasses daily of the Sprudel water for four weeks. At the end of that period the patient left Carlsbad apparently worse than when she arrived, and suffering the most agonizing pain. This continued for several weeks longer, when a copious discharge of gall-stones took place, and the sufferer was restored to health from the brink of the grave.

*Post, ergo propter*, is a fallacy against which the physician must be especially watchful. Treatment is given—a cure follows. Did the treatment produce the cure? Not always; and yet in cases like the above it is difficult to avoid the conclusion that the Carlsbad waters hastened, if they did not determine, the favorable result.

6. Enlargement of the spleen is a disorder well known in our Western country, and wherever intermittent fever prevails. The gland may increase to ten times its natural size, producing a conspicuous abdominal tumor upon the left side. A similar enlargement, though not so great, appears not infrequently as a sequel of typhoid fever. In the malarious form of the disorder there is a serious diminution of the red corpuscles of the blood. These functional derangements of the spleen are generally cured by a month or six weeks at Carlsbad.

7. A word must be said as to a class of ailments which may be described as general nutritory perversions; their chief representatives being gout, rheumatism, anaemia, corpulence, and *diabetes mellitus*. All of these complaints, except diabetes in its advanced stages, are curable by the Carlsbad treatment. The last-mentioned disease is still in many cases obscure, but its gravity and its increasing frequency are equally well established. Bouchardat says: "Take twenty men in good position, and anywhere from forty to sixty years of age—legislators, men of science, prominent merchants or financiers, or even army officers: you will be sure to find one case of diabetes among the score." The symptoms are an excessive secretion from the kidneys, charged with sugar; excessive appetite and thirst; dryness of the skin; emaciation; loss of the hair and teeth; eczema; boils and carbuncles; and naturally great mental depression. The course of the disease is generally a grave one. But if taken in time, as Hufeland first pointed out, good results have been attained by the use of these waters.

Such are the chief of the disorders which are the most successfully treated at Carlsbad. Local writers include many others, as vesical catarrh, hemorrhoids, hypertrophy of the prostate gland, inflammatory deposits in the peritoneal cavity, and so on. Certain selected cases would doubtless find benefit from these powerful waters.

But Carlsbad is by no means a cure-all, and a word is needed as to the counter-indications, the complaints which are not bettered—which may be aggravated even—by using these waters. They are, briefly, the following:

1. Diseases of disorganization, as phthisis, malignant tumors, marasmus, brain-softening or degeneration of the spinal cord, and Bright's disease of the kidneys, are better treated at other springs than Carlsbad.

2. When acute febrile action is present, even the disorders named as suitable for treatment by these waters will be little benefited. In this case hygienic measures are the chief means of relief until the feverish symptoms have been checked.

3. Patients suffering from nervous maladies will do better at Salins, Luxeuil, or some other one of the quieter French spas, according to the symptoms.

4. A marked disposition to hemorrhages,

vertigo, the apoplectic habit, or any serious lesions of the arteries or the valves of the heart, will not derive benefit from treatment at Carlsbad.

Not less important than the drink cure and the bath cure which I have described is the proper direction of the patient's regimen. This plays a vital part in the treatment, not only at Carlsbad, but at any other mineral spring. Diet, exercise, amusement, sleep—the proper regulation of these forms an *adjunct treatment* which can not be neglected by one who is in earnest about his cure.

The invalid's diet, while it is nutritious and sufficient, should always be moderate in quantity. Some physicians go so far as to say that the invalid should never completely satisfy his appetite during the treatment. I should restrict this austerity to the dyspeptics, who form so large a part of the cases treated here. The Carlsbad *cuisine* is, indeed, a little provincial, but it supplies all the essentials of diet; and in addition I have found in perfection at Carlsbad three good things (I will not call all of them essentials) which I have never found in perfection in any one place elsewhere. They are bread, coffee, and beer. Good bread you find in Vienna and in Italy, good beer in Berlin, good coffee in Paris, but for perfect bread, beer, and coffee together you must go to Carlsbad. These good things, however, are by no means allowed to the invalid at discretion. Beer is generally forbidden until the latter part of the cure, coffee is permitted in moderation only, and special warning is given not to eat more than two or three of the delicious rolls at a meal. Soup and digestible meats are allowed, and vegetables in small quantity; fruits are forbidden. There is considerable charity for the smoker, half rations of the weed being generally permitted. Simple as it is, the Carlsbad bill of fare would dismay Dr. Alcott and the vegetarians. But this is not the place to give details of the scheme of diet, which, indeed, must conform to the needs of the individual case.

Oddly enough, for a place so rich in thermal springs, Carlsbad has no good drinking water. But the deficiency is more than made good by the neighboring Giesshübler spring, of which some three millions of bottles are annually exported by Mr. Mattoni, the proprietor. The Giesshübler water is mildly alkaline and acidulous, and is one of the very best and plea-

santest of all table waters. In Carlsbad it is freely used as a tonic beverage, either alone or mixed with wine. It sparkles like champagne when used with syrups. It is a favorite table water in Austria, and is even exported to England and America, the annual sale being as much as three millions of bottles.

The place itself, eight miles from Carlsbad, deserves to be better known. Giesshübel is an earthly paradise, and the baths are perfectly appointed in every respect. The whey cure is also given. The resident physician is Dr. Kämmerer. For a quiet retreat, amid surroundings of idyllic beauty, Giesshübel can be recommended to a large class of patients who do not require, or who have already used, the more potent springs upon the Tepl.

The usual hours of meals at Carlsbad are, for breakfast, nine o'clock; for dinner, one to two; a light lunch at five; and supper at about seven o'clock in the evening.

As to exercise, the principle is that it should be abundant, but never violent. The local physicians are not a little annoyed by the zeal of some of their patients, mainly English and Americans, in "running up and down hills," as one of them calls it. These excesses retard the cure. But, on the other hand, the patient should spend the greater part of his time out-of-doors when the weather is good. The walks and drives are delightful; the valley itself is as lovely as that of Rasselas; but there is no need to clamber over its limiting hill-tops in order to seek other horizons.

Dancing is allowed to some of the guests—of course in moderation; billiard-playing, which is still looked upon somewhat askant by many good people among us, is one of the best forms of exercise during the treatment, or "cure," as it is always hopefully called. Theatre-going, and even card-playing, are sometimes permitted. There is a little theatre in the place, which should be visited once for curiosity's sake. Even social pleasure should be taken moderately; and special caution may be given to argumentative people to avoid too vivacious discussions during their walks or rides. Cheerful talk and temper should be invited. Least of all should one discuss his own maladies: it is much better to converse upon the origin of space, or some equally unexciting subject.

Sleep fills a good part of the time of the visitor to Carlsbad; but sleep during the

day is generally unadvisable, except to those who find themselves drowsy after the bath, or unduly fatigued after exercise, and of course when the night's rest has been badly broken. After-dinner naps, however, should be avoided; they have a tendency to produce cerebral congestion.

In connection with the Carlsbad waters those of two neighboring springs may be described. Marienbad is a Bohemian town situated in the territory of the ancient Abbey of Tepl (to which the springs belong), and in a southward-opening valley. It is two hours by rail from Carlsbad, though the distance in a straight line across the hills is but nineteen miles. Marienbad is situated in a charming forest country two thousand feet above sea-level. The adjacent region is a natural park, with beautiful walks and drives in every direction. The springs, in comparison with those of Carlsbad, are but of yesterday—that is to say, it was not until the year 1770 that the abbot of the Tepl convent resolved to use the water, and to bring it into notice. The accounts of the early cures are doubtless exaggerated; they read almost like Scripture miracles. In 1781 "a very tall, hoary-headed man came up to the Marienbrunn and asked alms"; he had brought his son from Chotieschau on a wheelbarrow. The invalid, forty years old, was a clay-digger; the clay had fallen on him, and he was paralyzed in both legs. The abbot supported the father and the son; baths and frictions were given; in four weeks he was able, "praising God, to return to his home." On this, buildings were erected, and the place has grown into a handsome modern town, with splendid hotels, and an annual concourse of invalids numbering ten thousand or more. Goethe lived here for a time, and they show his seat on the hill-side.

It is a lesser Carlsbad—quieter and less crowded—and it is the resort of not a few Carlsbad patients, for a few weeks' change of scene after they leave the larger watering-place. The Marienbad waters belong to the same class as those of Carlsbad, and spring from the same granite formations. The difference is that they are cold; their temperature ranging from 43° to 50° F. They are clear when drawn, but become turbid on exposure to the air, and throw down a yellowish-brown sediment. The different springs are more various in their composition than those of Carlsbad. The

Kreuzbrunn is the most celebrated of the six springs that are used; this, the Rüdolfsquelle, and the Waldbunn are used for drinking; the Ferdinands, Carolinen, and Ambrosiusbrunnen both for drinking and bathing; but bathing is less in vogue here than at Carlsbad, though every convenience is provided, including the carbonic acid baths and the peat baths. The peat of Marienbad is extremely rich in minerals; a bath of ten cubic feet contains no less than ten or twelve pounds of the sulphate of iron.

In general the indications for treatment at Marienbad are similar to those at Carlsbad. The Marienbad waters are also serviceable in cases of nervous prostration. But the main distinction between the two places remains to be noted: it is that of climate, exposure, and "environment." The climate of Marienbad is what Helfft calls a "wood climate." The place is surrounded by pine forests, the air is pure and cool, and the southern exposure is favorable. No more perfect resting-place can be found than in this beautiful valley among the Bohemian hills.

Franzensbad is situated on a turf plain near Eger, at an elevation of 1400 feet. It is only an hour's railway ride from Carlsbad—a quiet town, with five hotels. There are eleven springs, all owned by private persons; and the arrangements for baths are admirably complete. The season is from the first of May to the last of September. Nearly eight thousand visitors repaired to Franzensbad last summer, the larger part of them ladies. The waters have great renown in the treatment of complaints peculiar to the female sex. They belong to the class of ferruginous springs, and are strongly tonic. They are cold—50° F.—and do not overflow like the more abundant waters of Carlsbad. The Franzensquelle is the most famous of the springs; it is crowded in the afternoon from four to six o'clock. The names of Dr. Carl Klein at Franzensbad and of Dr. Heidler at Marienbad may be mentioned without impropriety as those of physicians who are among the foremost of the places respectively.

Such are these healing waters. A few words upon the way of reaching them may be serviceable. All roads lead to Carlsbad as well as to Rome; but there is choice among them, according to the tastes and the strength of the invalid.

American passengers will find the shortest land journeys from Hamburg or Bremen, taking the steamers of these lines from New York; but this route is scarcely a comfortable one for those who are unfamiliar with the German language and *cuisine*. The routes to Liverpool and London involve a fatiguing journey and a voyage across the Channel before reaching the Continent. The ordinary routes are by Dover, Calais, and Brussels, by Ostend and Brussels, or by Queensborough and Flushing (the shortest), to Cologne; thence *via* Frankfort and Würzburg to Carlsbad. Invalids, however, will do better to avoid the Rhine; the hotels are generally noisy and full of soldiers, and the cookery is not good. To get to Carlsbad I advise the route through France, and preferably, the new line from New York to Bordeaux direct. The ships and their accommodations, including the table, are first-class, and they are not yet crowded, like most of the older lines of Atlantic steamers—a circumstance of no little consequence to the invalid, especially when he is accompanied by his family. I wish no pleasanter fortune to a traveller than to sail, as I have done, with Captain Journeil of this excellent line. Arrived in Bordeaux, the express trains take one in eight hours to Paris; but either city is a pleasant one in which to rest from the voyage. From Paris the route is pleasant throughout. It is as follows, by partial days' journeys only: Day express to Basel; sleep there. Next day to Zürich; sleep. Thence to Rorschach, crossing Lake Constance to Lindau for the night. Thence to Munich; sleep. Thence to Carlsbad. The whole route lies through beautiful scenery, and the best hotels in the world receive you at the close of each day's journey. Arrived at Carlsbad, it is best to spend a couple of days in a hotel before choosing rooms for one's stay. This is a choice to be made at leisure, and after resting a little. As to physicians, it can not be amiss to mention the names of these good ones, among others: Drs. Grünberger, Kraus, London, Neubauer, and Pichler.

In conclusion, let me say this to persons who are about to choose a healing spring: Mineral waters are at once among the most effective and the most delicate of the agents at the physician's command. But they are not to be chosen, if used, indiscriminately. Before setting out, and

again on arriving, take and follow the advice of a specially qualified physician. A single error or excess on the patient's part may undo the gain of many weeks. And one should be always on his guard against the *amateur advice* which is everywhere so freely given. "Must you pay court to some important personage, or perhaps to some fair lady? Even in this case do not permit yourself to drink from the same spring either with the dame or the diplomate unless you already have your doctor's permission. Imagine these situations distinctly beforehand; be on your guard against the most winning smile, the most desirable influence; think first of all about your liver and your stomach, which are of paramount importance in your case. Remember what you have suffered, and what you will suffer if you are not cured, and deny yourself every complaisance, every irregularity, especially at the table. Your neighbors will urge you, in their ignorance and weakness, to eat and drink as they do; your own stomach will be a ready accomplice: you must resist it; and do not think that, since the waters are curative, the more you drink the sooner you will be cured. It is a great mistake. Too much water drowned a miller, said Sancho Panza."

This is Le Pileur's counsel, and it is sound advice for the visitor to a curative spring. It is required by some who go to Carlsbad, and especially by some Americans, for the waters are especially calculated to benefit the ailments that are common among us. I distinguish between springs where people go to amuse themselves and springs where people go to be cured. Carlsbad is one of the latter. A patient who has taken the trouble to go so far should not insist on treating his own case.

My friend Surgeon-General Ray, of the Indian army, will allow me to recall a phrase which he used in conversation with me on the spot last summer: "The Carlsbad waters are *serious* waters." They are resorted to by invalids who are really in search of a cure, and not, like most of the popular Rhine spas, for amusement or distraction. I am often asked, Do you believe in mineral springs? And I answer, Yes, and No. There are "serious waters," like those of many Austrian and French spas, and there are pleasure spas for those who like them. There are serious patients too, and trifling patients. Many

an invalid, on hearing that Carlsbad, or Salins, or Mont Dore, or Luxeul, is an effective spring, chooses one of them according to the right of private judgment, and repairs to one of them, or more than one. Arrived there, he drinks and bathes according to the same indefeasible right, and regulates or neglects his regimen by the same. To these ingenuous persons I say: You had better stay at home; not all the waters of Abana and Pharpar, nor yet of Jordan, are for you. The doctors are ignorant, you think? Well, grant that even a good doctor is not omniscient; he certainly knows more than you do. And even if you knew as much as he, you can not be an impartial adviser in your own case. The self-curer had better stay at home. But to the invalid who will accept competent guidance, first in choosing and second in using the mineral waters, I say it is worth while to make the trial.

There are two classes of people who doubt the value of mineral waters—those who have been misdirected, and have suffered in consequence, and those who have never suffered at all. The perfectly healthy are the severest critics of Carlsbad. Dr. Johnson, who held that sickness was criminal, would have denounced the place and the cure.

But I have seen too many cures at mineral springs to agree with these easy judgments. Even when we can not demonstrate just how the cure was caused, the fact remains that the patient went away sick and came back well. *Unum scio, quia cæcus cum essem, modo video*—one thing I know, that, whereas I was blind, now I see. For one who will rightly choose them and rightly use them, these are veritably healing waters.

#### THE MOUNT OF SORROW.

NEVER did anything seem fresher and sweeter than the plateau on which we emerged in the early sunset, after defiling all day through the dark deep mountain-sides in the rain.

We had promised Rhoda to assault her winter fastness whenever she should summon us; and now, in obedience to her message, a gay party of us had left the railway, and had driven, sometimes in slushy snow, and sometimes on bare ground, up the old mountain-road, laughing and singing and jangling our bells, till at length the great bare woods, lifting their line for-

ever before us and above us, gave place to bald black mountain-sides, whose oppressive gloom and silence stifled everything but a longing to escape from between them, and from the possible dangers in crossing bridges, and fording streams swollen by the fortnight's thaws and rains. Now and then the stillness resolved itself into the murmuring of bare sprays, the rustling of rain, the dancing of innumerable unfettered brooks glittering with motion, but without light, from the dusky depths; now and then a ghastly lustre shot from the ice still hanging like a glacier upon some upper steep, or a strange gleam from the sodden snow of their floors lightened the roofs of the leafless forests that overlapped the chasms, and trailed their twisted roots like shapes of living horror. What was there, I wondered, so darkly familiar in it all? in what nightmare had I dreamed it all before? Long ere the journey's end our spirits became dead as last night's wine; we shared the depression of all nature, and felt as if we had come out of chaos and the end of all things when the huge mountain gates closed behind us, and we dashed out on the plateau where the grass, from which the wintry wrapping had been washed, had not lost all its greenness, and in the sudden lifting of the rain-cloud a red sparkle of sunset lighted the windows as if a hundred flambeaux had been kindled to greet us.

A huge fire burned in the fire-place of the drawing-room when we had mounted the stairs and crossed the great hall, where other fires were blazing and sending ruddy flames to skim among the cedar rafters; and all that part of the house sacred to Colonel Vorse, and opened now the first time in many winters, was thoroughly warm and cheerful with lights and flowers and rugs and easy-chairs and books. We might easily have fancied ourselves, that night, in those spacious rooms, when, toilets made and dinner over, we re-assembled around the solid glow of the chimney logs, a modern party in some old mediaeval chamber, all the more for the spirit of the scene outside, where the storm was telling its rede again, rain changing to snow, and a cruel blast keening round the many gables and screaming down the chimneys. After all, Rhoda's and Merivale's plan of having us in the hills before late-lingering winter should be quite gone, and doing a little Sintram business with skates and wolves and hill visions, should have been

carried out earlier. To them it was all but little less novel than it was to me, and Rhoda, who, although a year or two my junior, had been my intimate, so far as I ever had an intimate, would not rest till she had devised this party, without which she knew she could not have me, even persuading our good old Dr. Devens to leave his pulpit and people, and stamp the proceeding with his immaculate respectability. As it was, however, it looked as though we were simply to be shut in by a week of storm following the thaw. Well, there are compensations in all things: perhaps two people in whom I had some interest would know each other a trifle better before the week ended then.

The place was really the home of Rhoda and Merivale, or was now to become so. Colonel Vorse, their father, who had married so young that he felt but little older than they, and was quite their companion, was still the owner of the vast summer hostelry, although no longer its manager. After accumulating his fortune he had taken his children about the world, educating them and himself at the same time, with now an object lesson in Germany and now another in Peru, and finally returning to this place, which, so far as we could see, was absolute desolation, without a neighbor, but which to him was bristling with memories and associations and old friends across the intervalle and over the mountain and round the spur. There was something weird to me, as I looked out at the flying whiteness of the moon-lit storm, in those acquaintances of his among the hollows of these pallid hills; it seemed as though they must partake of the coldness and whiteness, and as if they were only dead people, when all was said. Perhaps Dr. Devens, who half the way up had been quoting,

"Pavilioned high, he sits

In darkness from excessive splendor born,"

had another phase of the same feeling. I heard him saying, as I passed him five minutes before, where he sat astride a chair in front of the long oriel casement: "There is a path which no fowl knoweth, and which the vulture's eye hath not seen: the lion's whelps have not trodden it, nor the fierce lion passed by it. He putteth forth his hand upon the rock; he overturneth the mountains by the roots. He cutteth out rivers among the rocks; and his eye seeth every precious thing. He bindeth the floods from overflowing; and

the thing that is hid bringeth he forth to light." He is expecting a convulsion of nature, I remember thinking, as I went by and paused at another window myself. A convulsion of nature! I fancy that he found it.

"There is something eerie here," I said, as I still gazed at the scene; for the dim gigantic shapes of the hills rose round us like sheeted ghosts, while the flying scud of the storm, filled with the white diffusion of unseen light, every now and then opened to let the glimpses out. "And see the witch-fires," as the rosy reflections of our burning logs and lights danced on the whirling snow without. "Is there anything wanting to make us feel as if we had been caught here by some spell, and were to be held by some charm?"

"I wish I knew the charm," said Colonel Vorse, by my side, and half under his breath. And then I felt a little angrier with myself for coming than I had felt before.

"I often hear you talking of your belief in certain telluric forces that must have most power among the mountains where they first had play, and where earth is not only beneath, but is above you and around you. Well, we are here in the stronghold of these telluric forces. I am their old friend and ally: let me see what they will do for me."

It was true. And I half shivered with an indefinite fear that I might be compelled, in spite of all wish and prejudice and birthright—I, the child of proud old colonial grandees of the South; he, the son of a mountain farmer, who had married a mate of his own degree, and had kept a mountain inn till fortune found him and death took her. My father at least was the child of those proud old colonials, and I had lived with his people and been reared on their traditions. Who my mother was I never knew; for my father had married her in some romantic fashion—a runaway match—and she had died at my birth, and he had shortly followed her. I had nothing that belonged to her but the half of a broken miniature my father had once painted of her, as I understood. I always wore it, with I know not what secret sentiment, but I showed it to nobody. I had sometimes wondered about the other half, but my life had not left me much time for sentiment or wonder—full of gayety till my grandfather's death left me homeless; full of gayety since his friend Mrs. Montresor

had adopted me for child and companion, subject to her kind whims and tyrannies. But if she took me here and took me there, and clad me like a princess, I was none the less aware of the fact that I was without a penny—morbidly aware of it without doubt. But it disposed me to look with favor on no rich man's suit, and the lover as penniless as I and as fine as my ideal lover had not yet appeared. It made me almost hate the face and form, the color, the hair, that they dared to call Titianesque, speak of as if it were the free booty of pigment and canvas, and wish to drag captive in the golden chains of their wealth. When I had met Colonel Vorse, a year ago, twice my age though he was, he was the first one I had wished as poor as I—he the plebeian newly rich. Yet not so newly rich was he that he had not had time to become used to his riches, to see the kingdoms of the earth and weigh them in his balance, to serve his country on the battle-field, and his State in the council-chamber; and, for the rest, contact with the world is sadly educating.

"I often look at Colonel Vorse among the men born in the purple," said Mrs. Montresor once—she thought people born in the purple were simply those who had never earned their living—"and he is the superior of them all. What a country it is where a man keeping a common tavern in the first half of his life may make himself the equal of sovereigns in the other half! I don't understand it; he is the finest gentleman of them all. And he looks it. Don't you think so, Helena?"

But I never told Mrs. Montresor what I thought. It is all very well to generalize and to be glad that certain institutions produce certain effects; but of course you are superior to the institutions, or you wouldn't be generalizing so, and all the more, of course, superior to the effects, and so I don't see how it signifies to you personally.

"You ought to have your head carried on a pike," said Mrs. Montresor, again. "You will, if we ever have any *bonnets rouges* in America. You are the aristocrat pure and simple. The Princess Lamballe was nothing to you. You think humanity exists so that *nous autres*, by standing on it, may get the light and air. You are sure that you are made of different clay—the canaille of street mud, for instance, and you of the fine white stuff from which they mould Dresden china.

